UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,302	01/10/2006	Kiyohiko Hatake	TOYA108.010APC	7332

20995 7590 09/25/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
HUFF, SHEELA JITENDRA	

ART UNIT	PAPER NUMBER
1643	

NOTIFICATION DATE	DELIVERY MODE
09/25/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.	Applicant(s)	
	10/564,302	HATAKE ET AL.	
	Examiner	Art Unit	
	Sheela J. Huff	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10 January 2006 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 12/18/06;6/9/06;2/21/06.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-26 are pending.

Information Disclosure Statement

The IDS filed 12/18/06, 6/9/06 and 2/21/06 have been considered and initialed copies of the PTO-1449 are enclosed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-11, 20-22, 24 and 26 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to polypeptides having the amino acid sequence of SEQ ID no. 2 or 3 or aa 36-60 or aa 36-61 of SEQ ID NO. 1. "Having" is open language therefore the claims read on peptide containing SEQ ID no. 2 or 3 or aa 36-60 or aa 36-61 of SEQ ID NO. 1 with an unspecified length and composition of amino acids on either side of said sequences. While the amino acid sequence of SEQ ID no. 2 or 3 or

aa 36-60 or aa 36-61 of SEQ ID NO. 1 are adequately described in the specification as-filed, thereby providing an adequate basis for said sequences; there is insufficient written description as to the identity of a polypeptide having SEQ ID no. 2 or 3 or aa 36-60 or aa 36-61 of SEQ ID NO. 1 that would still maintain the function of the polypeptide. Consequently, the specification does not provide an adequate written description of an polypeptides having SEQ ID no. 2 or 3 or aa 36-60 or aa 36-61 of SEQ ID NO. 1.

The specification as filed does not provide adequate written description support for polypeptides having SEQ ID no. 2 or 3 or aa 36-60 or aa 36-61 of SEQ ID NO. 1. Polypeptides having diverse functions are encompassed by said polypeptides. Thus a broad genus having potentially highly diverse functions is encompassed by said polypeptides and conception cannot be achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method. For example, Skolnick et al. (Trends in Biotech., 18(1):34-39, 2000) teach that the skilled artisan is well aware that assigning functional activities for any particular protein or protein family based upon sequence homology is inaccurate, in part because of the multifunctional nature of proteins (e.g., Abstract and Sequence-based approaches to function prediction, page 34). Even in situations where there is some confidence of a similar overall structure between two proteins, only experimental research can confirm the artisans best guess as to the function of the structurally related protein (see in particular Abstract and Box 2). Adequate written description requires more than a mere statement that it is part of the invention. The sequence itself is required. See Fiers v.

Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016.

Therefore, only SEQ ID no. 2 or 3 or aa 36-60 or aa 36-61 of SEQ ID NO. 1 meet the written description provision of 35 U.S.C. 112, first paragraph. Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the written description inquiry, whatever is now claimed. (See page 1117.) The specification does not clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed. (See Vas-Cath at page 1116.). Consequently, Applicant was not in possession of the instant claimed invention. See University of California v. Eli Lilly and Co. 43 USPQ2d 1398.

Claims 8-11, 20-22, 24 and 26 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for peptides consisting of aa residues 36-60 of SEQ ID NO. 1 and aa 36-61 of SEQ Id NO. 1, does not reasonably provide enablement for peptides having substitutions, deletions, additions or inversions of one or more amino acids residues in aa residues 36-60 of SEQ ID NO. 1 and aa 36-61 of SEQ Id NO. 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The scope of the claims is not commensurate with the enablement provided by the disclosure with regard to the extremely large number of proteins broadly encompassed by the claims and the claims broadly encompass a significant number of inoperative species. Since the amino acid sequence of a protein determines its structural and functional properties, predictability of which changes can be tolerated in a protein's amino acid sequence and still retain similar biological activity requires a (1) knowledge of and guidance with regard to which amino acids in the protein's sequence, if any, are tolerant of modification and which are conserved (i.e., expectantly intolerant to modification), and (2) detailed knowledge of the ways in which the protein's structure relates to its function. However, the problem of predicting protein structure from mere sequence data of a single protein and in turn utilizing predicted structural determinations to ascertain functional aspects of the protein and finally what changes can be tolerated with respect thereto is extremely complex and well outside the realm of routine experimentation.

While recombinant and mutagenesis techniques are known, it is not routine in the art to screen for multiple substitutions or multiple modifications of other types and the positions within the protein's sequence where amino acid modifications can be made with a reasonable expectation of success in obtaining similar biological activity are limited in any protein. The result of such modifications is unpredictable based on the instant disclosure. One skilled in the art would expect any tolerance to modification shown for a given protein to diminish with each further and additional modification, e.g., multiple substitutions. The sequence of some proteins is highly conserved and one

skilled in the art would not expect tolerance to any amino acids modifications in such proteins.

The specification does not support the broad scope of the claims which encompass all modifications and fragments because the specification does not disclose the following: the general tolerance to modification and extent of such tolerance; the specific positions and regions of the sequence(s) which can be predictably modified and which regions are critical; what fragments, if any, can be made which retain the biological activity of the intact protein; and the specification provides insufficient guidance as to which of the essentially infinite possible choices is likely to be successful.

Protein chemistry is probably one of the most unpredictable areas of biotechnology. For example, the replacement of a single lysine at position 118 of the acidic fibroblast growth factor by a glutamic acid led to a substantial loss of heparin binding, receptor binding, and biological activity of the protein (see Burgess et al, Journal of Cell Biology Vol 111 November 1990 2129-2138). In transforming growth factor alpha, replacement of aspartic acid at position 47 with asparagine, did not affect biological activity while the replacement with serine or glutamic acid sharply reduced the biological activity of the mitogen (see Lazar et al Molecular and Cellular Biology Mar 1988 Vol 8 No 3 1247-1252).

Replacement of the histidine at position 10 of the B-chain of human insulin with aspartic acid converts the molecule into a superagonist with 5 times the activity of nature human insulin. Schwartz et al, Proc Natl Acad Sci USA Vol 84:6408-6411

(1987). Removal of the amino terminal histidine of glucagon substantially decreases the ability of the molecule to bind to its receptor and activate adenylate cyclase. Lin et al Biochemistry USA Vol 14:1559-1563 (1975).

These references demonstrate that even a single amino acid substitution or what appears to be an inconsequential chemical modification, will often dramatically affect the biological activity of the protein.

Although biotechnology has made great strides in the recent past, these references serve to demonstrate exactly how little we really know about the art. Elucidation off the genetic code induces one to believe that one can readily obtain a functional synthetic protein for any known nucleic acid sequence with predictable results. The results of the construction of synthetic proteins remain very unpredictable as Burgess et al, Lazar et al, Schwartz et al, Lin et al conclusively demonstrate.

Thus, applicants have not provided sufficient guidance to enable one of ordinary skill in the art to make and use the claimed protein in manner reasonable correlated with the scope of the claims broadly including any number of additions, deletions, or substitutions etc. The scope of the claims must bear a reasonable correlation with the scope of enablement. See In re Fisher, 166 USPQ 19 24 (CCPA 1970). Without such guidance, the changes which can be made in the protein's structure and still maintain biological activity is unpredictable and the experimentation left to those skilled in the art is unnecessarily and improperly extensive and undue. See Amgen, Inc. v. Chugai Pharmaceutical Co. Ltd., 927 F,2d 1200, 18 USPQ 1016 (Fed. Cir. 1991) at 18 USPQ 1026 1027 and Ex parte Forman, 230 USPQ 546 (BPAI 1986).

Claims 13, 23 and 25-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 13 is vague and indefinite because of the terminology "and attached with an indication .....used for an antibody therapy of cancer". How can the food or drink have something attached to it?

b. Claims 23 and 25-26 are vague and indefinite because they reference in vivo uses by administering hydrolyzed lactoferrin and then refer to an antibody therapy. The body of claim does not have an positive step in which the antibody gets into the patient. Thus, applicant need to add more positive reaction steps to the claims with the addition of new matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 and 14-26 are rejected under 35 U.S.C. 102(a) as being anticipated by Sakurai et al Rinsho Ketsueki (8/30/04) vol. 45 p. 915 (submitted by applicant in IDS of 2/21/06) as evidenced by Yoo et al Jpn. J. Cancer Res. 88:184 (1997).

Sakurai et al discloses the use of bovine lactoferrin hydrolyzed with pepsin and Rituximab (antiCD-20) to reduce the growth of three lymphoma cell lines. The reference further states that the use of lactoferrin reinforced the cytotoxicity of Rituximab. Because the reference used the combination in an assay they had to prepate the drug in a pharmaceutically acceptable carrier. Bovine lactoferrin hydrolyed with pepsin process the peptides or claim 8 as evidence by Yoo et al. Yoo et al shows that the pepsin generated peptide from bovine lactoferrin is FKCRRWQWRMKKLGAPSITCVRRAF (top of page 185-second column)(which is Seq ID No. 2 and aa residues 36-60 of SEQ Id NO. 1 of the instant invention).

Even though the reference is silent as to degradation rate of the lactoferrin hydrolysate, the average molecular weight, it is inherent that the bovine lactoferrin hydrosylate of the reference has the same properties as that of the reference because both use bovine lactoferrin, the same enzyme for hydrolysis and the same peptide is produced.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claims 8-11 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Nuijens et al US 6333311 or Tomita et al 5304633.

Nuijens et al discloses SEQ ID NO. 4 which reads on the peptides of (a)-(d) of claims 8 and 24 and making them into pharmaceutical formulations (col. 12).

Tomita et al discloses SEQ ID NO. 5 which reads on the peptides of (a)-(b) of claims 8 and 24 and making them into pharmaceutical formulations (col. 6-7).

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-229881.

This reference discloses the use of cow lactoferrin digested with lactoferrin ([0063]) to treat cancer patients. The cancers include breast and colon (abstract, [0024]). This reference also discloses that a syngeristic effect can be expected by combining the use of digested cow lactoferrin with other anticancer agents ([0040]).

The terminology "for enhancing cytotoxic activity of an antibody drug in an antibody therapy of cancer" is intended use. Applicant is reminded that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963). Also, see MPEP 2111.02. Products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Even though the reference is silent as to degradation rate of the lactoferrin hydrolysate, the average molecular weight, it is inherent that the cow lactoferrin hydrosylate of the reference has the same properties as that of the reference because both use cow lactoferrin and the same enzyme for hydrolysis.

Claims 1-11 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoo et al Jpn. J. Cancer Res. 88:184 (1997) as evidenced by page 12 of applicant's specification.

Yoo et al discloses the use of bovine lactoferrin and peptide generated peptide of bovine lactoferrin to inhibit tumor metastasis in lymphoma cells in mice. Yoo et al show that the pepsin generated peptide from bovine lactoferrin is FKCRRWQWRMKKLGAPSITCVRRAF (top of page 185-second column)(which is Seq ID No. 2 and aa residues 36-60 of SEQ Id NO. 1 of the instant invention). In order for the composition to be administered to mice, it had to be made in a pharmaceutically acceptable formulation. At the top of page 12 of the specification, applicant defines hydrolysate as including one type of peptide, which is why the claims referring to lactoferrin hydrolysate are included in this rejection.

Even though the reference is silent as to degradation rate of the lactoferrin hydrolysate, the average molecular weight, it is inherent that the cow lactoferrin hydrosylate of the reference has the same properties as that of the reference because both use cow lactoferrin and the same enzyme for hydrolysis.

The terminology "for enhancing cytotoxic activity of an antibody drug in an antibody therapy of cancer" is intended use. Applicant is reminded that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963). Also, see MPEP 2111.02. Products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Claims 1-13 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 08-073499.

This reference discloses the sequence IV in claim 5 (which is aa 1-51 of cow lactoferrin and includes appicant's SEQ ID NO. 2 and 3) (also see [0016]) and that this sequence has strong antitumor activity. This peptide was produced by digesting cow lactoferrin with pepsin([0004]). In paragraph [0019] the reference discloses the use of the peptides in food and livestock feed.

Even though the reference is silent as to degradation rate of the lactoferrin hydrolysate, the average molecular weight, it is inherent that the cow lactoferrin hydrosylate of the reference has the same properties as that of the reference because both use cow lactoferrin and the same enzyme for hydrolysis.

The terminology "for enhancing cytotoxic activity of an antibody drug in an antibody therapy of cancer", and the claims the further limit this, is intended use. Applicant is reminded that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963). Also, see MPEP 2111.02. Products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Claims 8, 10-11, 20, 22, 24, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/12542.

This reference discloses bovine lactoferrin peptide (LFB(17-41) in the abstract and this read on applicant's SEQ ID NO. 2 and aa 36-60 of SEQ ID No. 1) and its use in a medicament as an anti-tumor agent (see abstract). This reference also discloses the use of lactoferrin peptide with other active ingredients such as chemotherapeutics including antibodies (see p. 36). Thus, one of skill in the art would immediately envisage the combination as its use as an anti-tumor composition. Also see page 26-27 and 34-36.

The terminology "for enhancing cytotoxic activity of an antibody drug in an antibody therapy of cancer" is intended use (for claims 8, 10-11, 20, and 22 and 24). Applicant is reminded that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963). Also, see MPEP 2111.02. Products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Claims 1-11, 14-17, 19-20, 22-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Iigo et al Clinical And Experimental Metastasis vol. 17 p. 35 (1999) as evidenced by Yoo et al Jpn. J. Cancer Res. 88:184 (1997).

This reference discloses the use of bovine lactoferrin, bovine lactoferrin hydrolyste (pepsin used for hydrolysis) and peptide lactoferricin (which is applicant's SEQ ID No. 2--see Yoo et al below) in combination in a medicament with anti-asialoGM1 antibody to inhibit tumor growth in lung and colon cancers in mice. Bovine lactoferrin hydrolyed with pepsin process the peptides or claim 8 as evidence by Yoo et al. Yoo et al shows that the pepsin generated peptide from bovine lactoferrin is FKCRRWQWRMKKLGAPSITCVRRAF (top of page 185-second column)(which is Seq ID No. 2 and aa residues 36-60 of SEQ Id NO. 1 of the instant invention).

Even though the reference is silent as to degradation rate of the lactoferrin hydrolysate, the average molecular weight, it is inherent that the cow lactoferrin hydrosylate of the reference has the same properties as that of the reference because both use cow lactoferrin and the same enzyme for hydrolysis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-073499 in view of applicant's specification page 2, lines 3+.

The reference has been discussed above.

The only difference between the instant invention and the reference is the use of an anti-cancer antibody, such as Anti-CD20, anti-HER2 or Anti-17-1A in combination with lactoferrin.

Applicant admits on page 2 of the specification that there are many known anti-cancer antibodies including Anti-CD20, anti-HER2 or Anti-17-1A.

In view of the fact, that there are many anti-cancer antibodies known in the art, including Anti-CD20, anti-HER2 or Anti-17-1A, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the known anti-cancer antibodies in combination with the hydrolyzed lactoferrin of the primary reference with the expected benefit of cancer treatment. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be

used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Claims 1-11 and 14-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iigo et al Clinical And Experimental Metastasis vol. 17 p. 35 (1999) in view of Yoo et al Jpn. J. Cancer Res. 88:184 (1997), WO 00/12542, JP 2000-229881 and applicant's admission on page 2, lines 3-13 of the specification.

Iigo et al and Yoo et al and their combination have been stated above.

The only difference between the instant invention and the references is the treatment of breast cancer and the use of othr anti-cancer antibodies such as anti-CD20, Anti-HER2 and Anti-17-1A.

WO 00/12542 discloses bovine lactoferrin peptide (LFB(17-41) in the abstract and this read on applicant's SEQ ID NO. 2 and aa 36-60 of SEQ ID No. 1) and its use in a medicament as an anti-tumor agent (see abstract). This reference also discloses the use of lactoferrin peptide with other active ingredients such as chemotherapeutics including antibodies (see p. 36). Also see page 26-27 and 34-36.

JP 2000-229881 discloses the use of cow lactoferrin digested with lactoferrin ([0063]) to treat cancer patients. The cancers include breast and colon (abstract, [0024]). This reference also discloses that a syngeristic effect can be expected by combining the use of digested cow lactoferrin with other anticancer agents)[0040]).

Applicant admits on page 2 of the specification that there are many known anti-cancer antibodies including Anti-CD20, anti-HER2 or Anti-17-1A.

In view of the fact, that there are many anti-cancer antibodies known in the art, including Anti-CD20, anti-HER2 or Anti-17-1A, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the known anti-cancer antibodies in combination with the bovine lactoferrin, bovine lactoferrin hydrolyste (pepsin used for hydrolysis) and peptide lactoferricin of the primary reference with the expected benefit of cancer treatment. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). It also would have been obvious to treat breast cancer because the JP document shows that

lactoferrin and its hydrolysates can be used in such treatments and since it is known that Ant-HER2 is used in breast cancer treatment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela J. Huff whose telephone number is 571-272-0834. The examiner can normally be reached on Tuesday and Thursday from 5:30am to 1:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sheela J Huff
Primary Examiner
Art Unit 1643

sjh